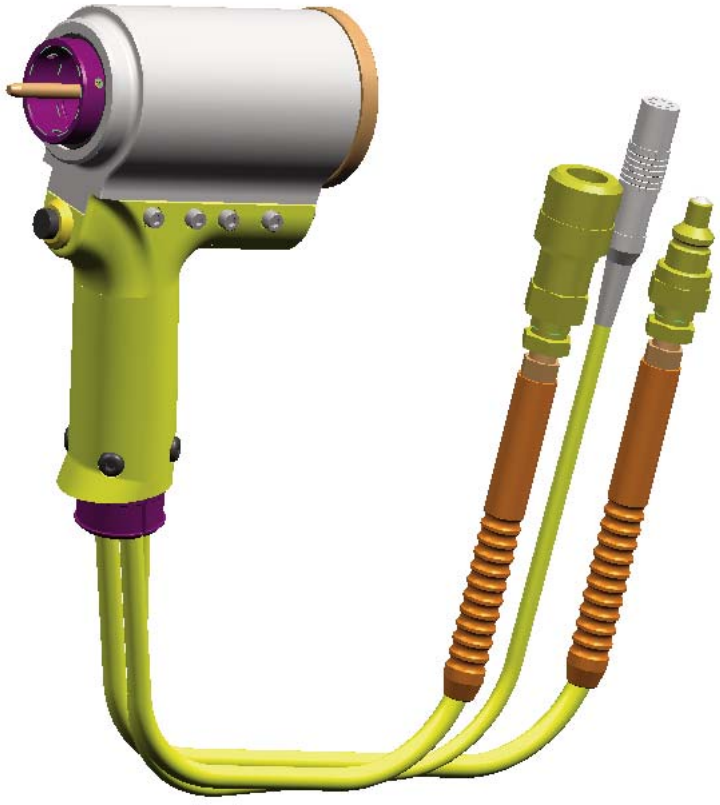
Alcoa Fastening Systems

ALCOA

INSTRUCTION MANUAL

BOBTAIL INSTALLATION SYSTEM

SFBTT20-IT



Makers of Huck®, Marson®, Recoil®
Brand Fasteners, Tools & Accessories

03-24-2010
HK1121

HUCK®

EC Declaration of Conformity

Manufacturer:
Alcoa Fastening Systems, Industrial Products Group, 1 Corporate Drive, Kingston, NY, 12401, USA

Description of Machinery:
SFBTT20-IT fastener installation tool

Relevant provisions complied with:
Council Directive related to Machinery (2006/42/EC)
British Standard related to hand held, non-electric power tools (EN 792-1)

European Representative:
Rob Pattenden, Huck International, Ltd. Unit C Stafford Park 7, Telford Shropshire TF3 3BQ, England, United Kingdom

Authorized Signature/date:
I, the undersigned, do hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Signature: _____

Full Name: Larry M. Krieg

Position: Product Engineer
Installation Systems Division

Place: Kingston, New York, USA

Date: December, 2009

Declared dual number noise emission values in accordance with ISO 4871
A weighted sound power level, LWA: 89.5 dB (reference 1 pW) Uncertainty, KWA: 3 dB
A weighted emission sound pressure level at the work station, LpA: 78.5 dB (reference 20 µPa) Uncertainty, KpA: 3 dB
C-weighted peak emission sound pressure level, LpC, peak: 93.6 dB (reference 20 µPa) Uncertainty, KpC: 3 dB
Values determined according to noise test code ISO 15744, using as basic standards ISO 3744 and ISO 11203. The sum of a measured noise emission value and its associated uncertainty represents an upper boundary of the range of values which is likely to occur in measurements.

Declared vibration emission values in accordance with EN 12096	
Measured Vibrations emission value, *a*:	.45 m/s^2
Uncertainty, K:	.11 m/s^2
Values measured and determined according to ISO 8662-1, ISO 5349-2, and EN 1033	

Test data to support the above information is on file at Alcoa Fastening Systems, Industrial Products Group, Kingston Operations, Kingston, NY, USA.

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SAFETY

This instruction manual must be read, with particular attention to the following safety guidelines, by any person servicing or operating this tool.

1. Glossary

— Product complies with requirements set forth by the relevant European directives.

— Read manual prior to using equipment.

— Eye protection required while using this equipment.

— Hearing protection required while using this equipment.

WARNINGS - Must be understood to avoid severe personal injury.

CAUTIONS - show conditions that will damage equipment and or structure.

Notes - are reminders of required procedures. ***Bold, Italic type and underlining*** **-** emphasizes a specific instruction.

2. A half hour long hands-on training session with qualified personnel is recommended before using Huck equipment.

3. Huck equipment must be maintained in a safe working condition at all times. Tools and hoses should be inspected at the beginning of each shift/day for damage or wear. Any repair should be done by a qualified repairman trained on Huck procedures.

4. Repairman and Operator must read manual prior to using equipment. Warning and Caution stickers/labels supplied with equipment must be understood before connecting equipment to any primary power supply. As applicable, each of the sections in this manual have specific safety and other information.

5. Read MSDS Specifications before servicing the tool. MSDS Specifications are available from the product manufacturer or your Huck representative.

6. When repairing or operating Huck installation equipment, always wear approved eye protection. Where applicable, refer to ANSI Z87.1 - 2003

7. Disconnect primary power source before performing maintenance on Huck equipment or changing Nose Assembly.

8. Tools and hoses should be inspected for leaks at the beginning of each shift/day. If any equipment shows signs of damage, wear, or leakage, do not connect it to the primary power supply.

9. Mounting hardware should be checked at the beginning of each shift/day.

10. Make sure proper power source is used at all times.

11. Release tool trigger if power supply is interrupted.

12. Tools are not to be used in an explosive environment unless specifically designed to do so.

13. Never remove any safety guards or pintail deflectors.

14. Ensure deflector or pintail collector is installed and operating prior to use.

15. Never install a fastener in free air. Personal injury from fastener ejecting may occur.

16. Always clear spent pintail out of nose assembly before installing the next fastener.

17. There is possibility of forcible ejection of pintails or spent mandrels from front of tool.

18. If there is a pinch point between trigger and work piece, use remote trigger. (Remote triggers are available for all tooling).

19. Unsuitable postures may not allow counteracting of normal expected movement of tool.

20. Do not abuse tool by dropping or using it as a hammer. Never use hydraulic or air lines as a handle or to bend or pry the tool. Reasonable care of installation tools by operators is an important factor in maintaining tool efficiency, eliminating downtime, and in preventing an accident which may cause severe personal injury.

21. Never place hands between nose assembly and work piece. Keep hands clear from front of tool.

22. There is a risk of crushing if tool is cycled without Nose Assembly installed.

23. Tools with ejector rods should never be cycled with out nose assembly installed.

24. When two piece lock bolts are being used always make sure the collar orientation is correct. See fastener data sheet of correct positioning.

25. Tool is only to be used as stated in this manual. Any other use is prohibited.

Principle of Operation

The operator pushes the Tool's Nose over the end of the fastener until the Tool's Puller bottoms on the fastener. When the Tool's Limit Switch Rod makes contact with the end of the fastener, the Limit Switch in the back of the Tool is activated. When the trigger is pressed, the rig receives a signal to swage the fastener. The Piston moves back to start the swaging process. After the fastener is fully swaged, the operator must release the trigger, at which point the Tool's Anvil is ejected off of the collar and the Tool is released from the fastener.

Specifications

Power Source: Huck POWERIG Hydraulic Unit

Hose Kits: Use only genuine HUCK Hose Kits rated @ 10,000 psi working pressure.

Hydraulic Fluid: ATF meeting DEXRON III, DEXRON IV, MERCON, Allison C-4 or equivalent specifications.

Fire resistant hydraulic fluid may also be used, and is required to comply with OSHA regulation 1926.302 paragraph (d): "the fluid used in hydraulic power tools shall be fire resistant fluid approved under schedule 30 of the US Bureau of Mines, Department of Interior, and shall retain its operating characteristics at the most extreme temperatures to which it will be exposed."

Max Operating Temp: 125 ° F (*51.7 ° C*)

Max Flow Rate: 2 gpm (*7.6 l/m*)

Max Inlet Pull Pressure: 7,000 psi, (*483 bar*)

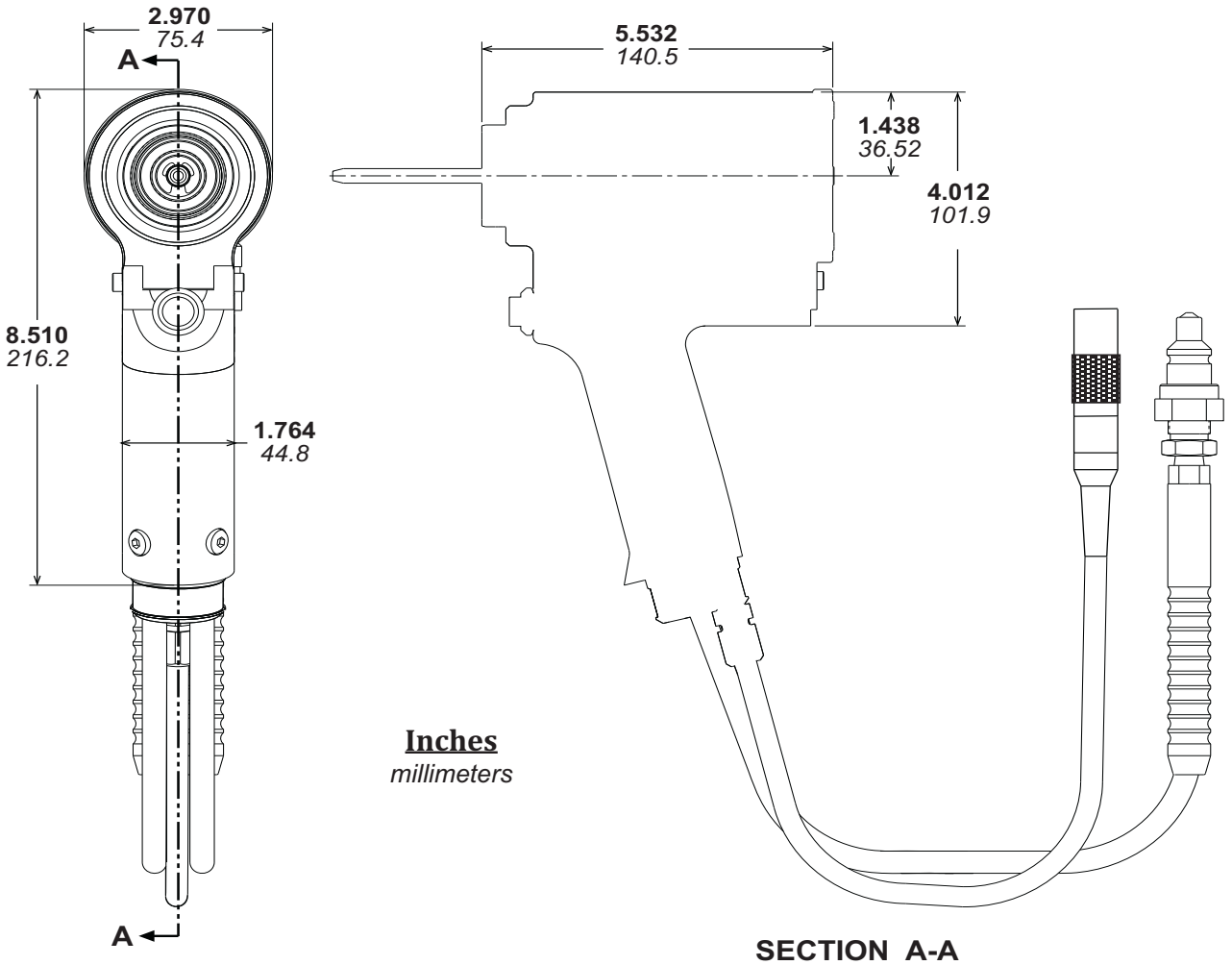
Max Inlet Return Pressure: 5,000 psi, (*345 bar*)

Pull Capacity: 20,650 lbf (*92 KN*)

Return Capacity: 9,500 lbf (*42 KN*)

Stroke: 2.00 inches (*5.08 cm*)

Weight: 10 lbs (*4.5 kg*)



PREPARATION FOR USE

WARNINGS:
Read full manual before using tool.

A half-hour training session with qualified personnel is recommended before using Huck equipment.

When operating Huck installation equipment, always wear approved eye protection.

Be sure there is adequate clearance for the operator's hands before proceeding.

CAUTION: Hose couplers must be completely screwed together to insure that ball checks in both nipple and body are completely open. Improperly assembled couplers will cause overheating and malfunctions in both tool and Powerig. Hand tighten couplers. Do NOT use a pipe wrench.

CAUTION: Do not let disconnected hoses and couplers contact a dirty floor. Keep harmful material out of hydraulic fluid. Dirt in hydraulic fluid causes valve failure In Tool and In POWERIG Hydraulic Unit.

POWER SOURCE CONNECTIONS

Coat hose fitting threads with a non-hardening Teflon™ thread compound such as Slic-tite.™ (Slic-tite is available from Huck as part number 503237.)

CAUTION: Do not use TEFLON®* tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction. (Slic-Tite is available in stick form as Huck P/N 503237.)

WARNING: Correct PULL and RETURN pressures are required for operator's safety and for Installation Tool's function. Gauge Set-Up, T-124833 and T-124833CE, Is available for checking pressures. See Tool SPECIFICATIONS and Gauge Instruction Manual. Failure to verify pressures may result in severe personal injury.

WARNING: Be sure to connect Tool's hydraulic hoses to POWERIG Hydraulic Unit before connecting Tool's switch control cord to unit. If not connected in this order, severe personal Injury may occur.

2. Use only a Huck POWERIG 918, 940, or equivalent that has been prepared for operation per applicable instruction manual. Cheek both PULL and RETURN pressures and adjust as necessary to match installation tool. Gage part number T-124833(new), for checking POWERIG pressures is available from Huck.

3. Turn POWERIG to "OFF" and couple tool hoses to POWERIG hoses.

5. Turn POWERIG to "ON" and depress and release trigger a few times to circulate hydraulic fluid. Observe action of tool. Check for fluid leaks.

6. Attach the proper Nose Assembly to the tool.

Tool to Powerig Setup

WARNING: To prevent tripping hazard, suspend tools and route hoses off of floors.

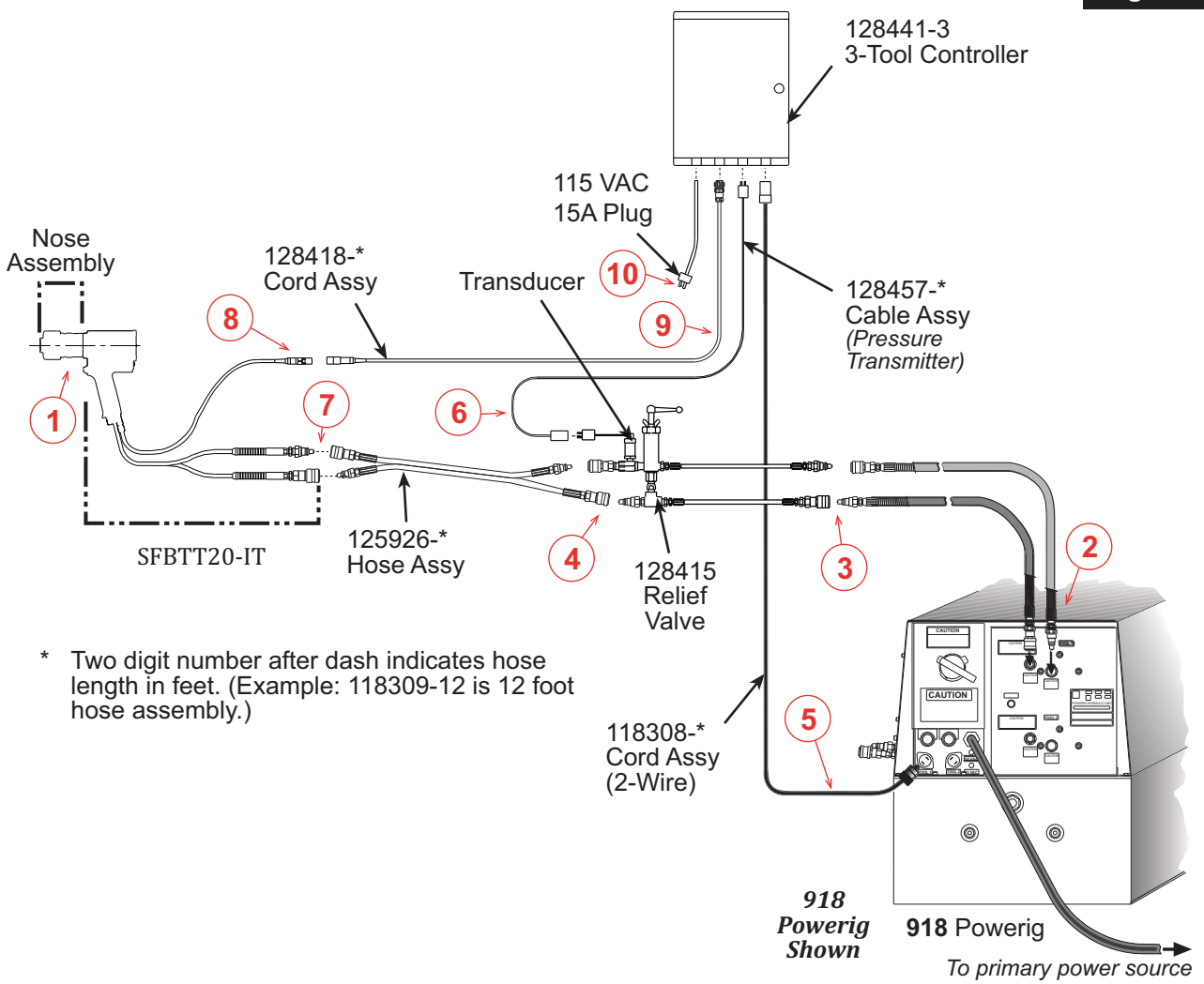
WARNING: Only use compatible equipment with this tool.

NOTE: To decrease Relief Valve pressure, turn the Relief Valve handle gradually counterclockwise; turn clockwise to increase pressure.

1. With the Nose Assembly in place on the Installation Tool, begin setup.
2. Connect the Hydraulic Hoses to the Powerig.
3. Connect the Relief Valve to the other end of the Powerig Hydraulic Hoses.
4. Connect Hose Assy to the Transducer (PULL pressure) and Relief Valve (RETURN pressure).
5. Connect Cord Assy from the Controller to the Powerig labeled TOOL 1.
6. Connect Cable Assy from the Controller to the Transducer.
7. Connect the Hose Assy to the installation tool.
8. Connect the Cord Assy to the installation tool.
9. a. Connect the other end of Cord Assy to the Controller at TOOL 1.
   b. Connect optional Hose/Cable Assy.
10. Connect the electrical plug from the Controller to a 120 VAC 15amp power.

continued

Figure 3



* Two digit number after dash indicates hose length in feet. (Example: 118309-12 is 12 foot hose assembly.)

SETUP *(CONTINUED)*

11. Set Pull and Return pressures on Powerig using Huck Gage P/N: T-124833CE and **Table 1**.

12. Using a load cell *(see* **PHOTO-A***)* or a skidmore, and a test fastener in the tool, energize the Powerig using a trigger switch. Adjust the Relief Valve *(see* **PHOTO - B***)* so the tool generates the Tool Force shown in **Table 1** below. This is a direct force reading, not pressure. It equals approximately the Relief Valve Pressure shown in **Table 1**. **NOTE: It is important to Release the Trigger while adjusting pressure, then re-energizing to re-check pressure. Otherwise, the reading on the pressure display may be incorrect.** When the desired pressure is achieved, reconnect the Controller Cord.

13. Tool #2 and Tool #3 - Set up the same way as Tool 1.

14. Once the system is set up, Install test fastener. Check to be sure that the fastener is installed correctly. This can be checked by inspecting the dimples on the collar flange. At least one dimple should be marked by the anvil. If not, add time to Timer #2 (Hold Timer) in the Controller box, and test with fasteners until the proper installation is achieved. See "Set Point Adjustments" in **CONTROLLER** section on the next page to adjust timer.

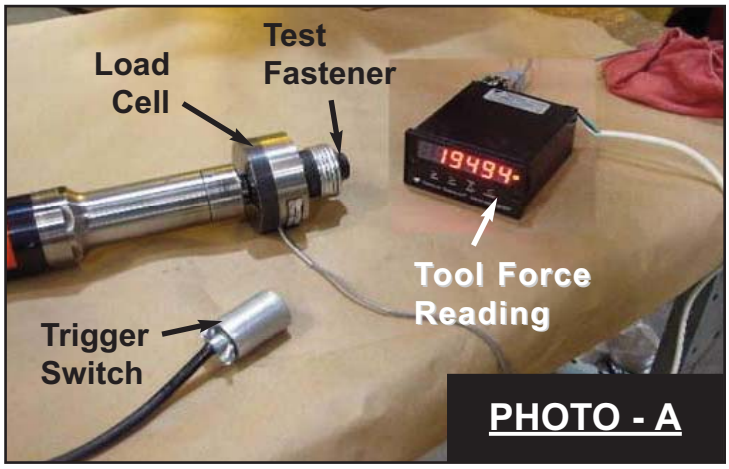


PHOTO - A

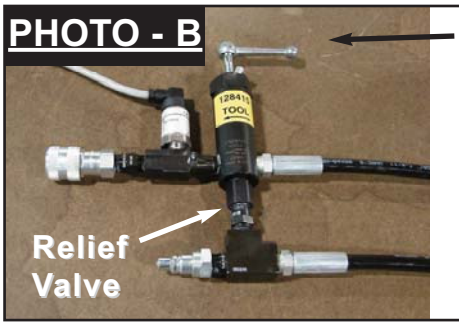


PHOTO - B

To decrease Relief Valve pressure, turn the Relief Valve handle gradually counterclockwise; turn clockwise to increase pressure.

Table 1 - Tool Force and Pressure Settings

Fastener Size and Grade	Tool Force (lbs)	Relief Valve Pressure (psi)	Powerig PULL Pressure Setting (psi)	Powerig RETURN Pressure Setting (psi)	Controller Pressure Setting (psi)i
1/2 inch Grade 5	7800-8000	2700	7000	5000	2450
5/8 inch Grade 8	20,500-21,000	6100	7000	5000	5850
12 mm Grade 10.9	12,000-13,000	4250	7000	5000	4000
14 mm Grade 10.9	16,000-17,000	5600	7000	5000	5350
16 mm Grade 10.9	20,500-21,000	6100	7000	5000	5850

128441-3 CONTROLLER

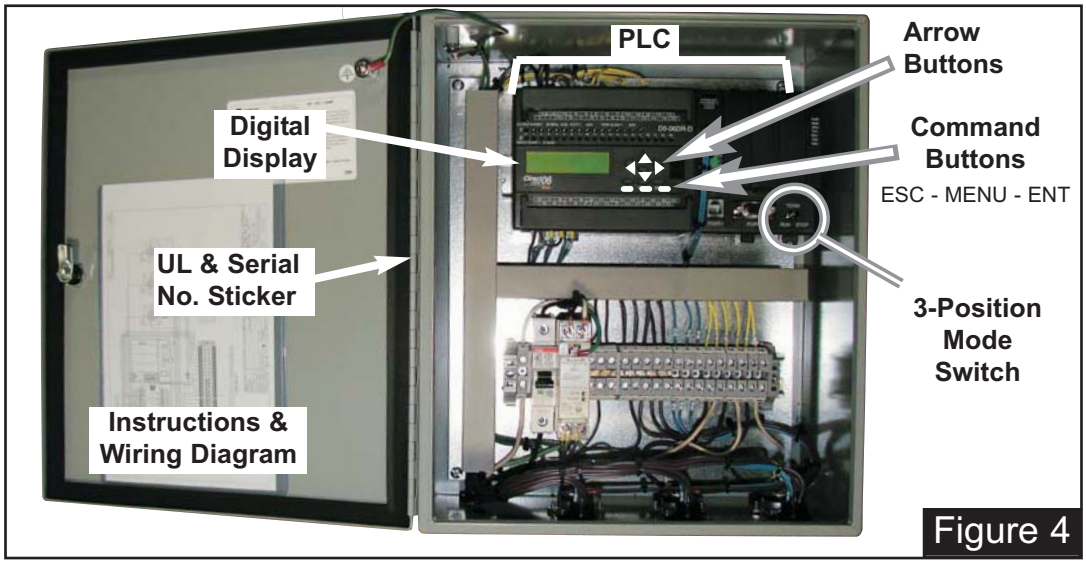


Figure 4

AS SHIPPED:

Controller Pressure:
4200 psi.

Hold Timer:
500 (.50 seconds).

Eject Timer:
600 (.60 seconds).

SET POINT ADJUSTMENTS

The active set points are displayed continuously while the Controller is in RUN mode. Stopping the Controller (which also stops Tool sequencing) allows the user to enter the Controller menu to make adjustments. ***Do not begin this procedure if any of the Tools are still in use.***

1. Move the 3-Position Mode Switch on the PLC to "STOP" (right-most position).

2. Press the **MENU** Command Button to enter the "Monitor" menu.

M	3	:	>	D	A	T	A		M	O	N	I	T	O	R
			>	B	I	T			M	O	N	I	T	O	R

3. Press the **ENT** Command Button to select "Data Monitor". Press **ENT** again to select "V" data type.

M	3	:	D	A	T	A		T	Y	P	E				V
A	D	D	R	E	S	S					0	0	0	0	0

4. Enter the address button of the value you need to alter. Use the left (◄) and right (►) buttons to position the cursor. Use the up (▲) and down (▼) buttons to change individual digits. Press the **ENT** Command Button when finished.

5. Press the **ENT** Command Button to enter the "Change" menu.

6. Use the arrow buttons again to enter the new value. Press **ENT** when finished.

M	3	:	D	A	T	A				V					0
	C	H	G	=		0	0	0	0			0	0	0	0

"V" ADDRESS	DESCRIPTION	RANGE	DEFAULT	UNITS
07411	T1 Press. SetPt	1000-9999	4200	psi
07412	T2 Press. SetPt	1000-9999	4200	psi
07413	T3 Press. SetPt	1000-9999	4200	psi
07421	T1 Hold Timer	0-3000	500	msec
07422	T2 Hold Timer	0-3000	500	msec
07423	T3 Hold Timer	0-3000	500	msec
07431	T1 Eject Timer	250-3750	600	msec
07432	T2 Eject Timer	250-3750	600	msec
07433	T3 Eject Timer	250-3750	600	msec

7. Press the **ESC** Command Button 5 times to exit.

8. Move the Mode Switch back to "RUN" (left-most position).

9. Check the continuously scrolling display for your new value before using the Tool again.

Operating Instructions:

WARNING: To avoid pinch point, never place hand between nose assembly and work piece.

WARNING: Only use compatible equipment with this tool.

1. Push the tool's nose over the end of the fastener until it bottoms out.
2. Press the trigger and hold until the collar is swaged and the tool's Anvil is ejected off the collar and the tool is released from the fastener.

Wrenching-up of Pipe Threads

The following table pertains to 1/8, 1/4, and 3/8 NPTF joints in this product. All turn counts listed are beyond hand-tight. Teflon stick or equivalent (NOT tape) must be used without exception.

Table 2 - Wrenching-up of Pipe Threads

Pipe Thread Size	Number of Turns
1/8 NPTF	2 - 2 1/4
1/4 NPTF	1 1/2 - 1 3/4
3/8 NPTF	1 1/2 - 1 3/4

Limit Switch Adjustment

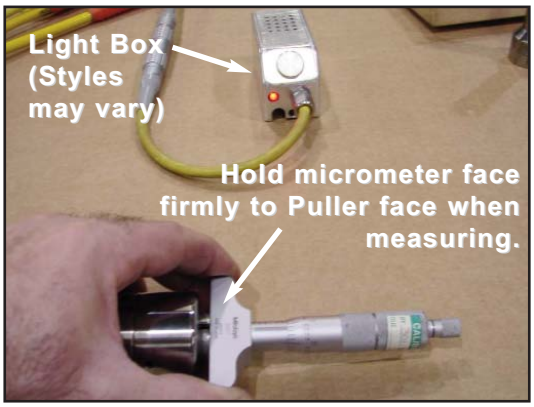
TOOLS NEEDED

1. Controller or Light Box
2. Depth Micrometer
3. Allen Wrench

Refer to Parts List on page 12, and Figures 5 and 6 on pages 13 and 14 for identification of Components.

NOTE: It is important to ensure that the face of the micrometer is firmly against the Puller Head, and the micrometer depth pin is in contact with the Actuator Rod when measuring.

1. Check to see where the Limit Switch is set using the Light Box and the Depth Micrometer.
2. Using an Allen wrench, remove Screw (Item 24, Figure 5).
3. To increase the switch setting turn the Set Screw (Item 17d, figure 6) counterclockwise; to decrease it, turn it clockwise.
4. Adjust the switch to the specification of .430-.435". You will notice the Light Box light will come on once the switch has been made.
5. Replace Screw (24).
   NOTE: After tightening the Lockdown Screw, verify the adjustment again by measuring with the depth micrometer.
6. Once adjusted to the desired specification, disconnect the Light Box and reconnect the system. The tool is now ready to drive fasteners.



MAINTENANCE

CAUTIONS:
- ***Consult MSDS before servicing tool.***
- ***Keep dirt and other material out of hydraulic system.***
- ***Separated parts most be kept away from dirty work surfaces.***
- ***Dirt/debris in hydraulic fluid causes failure in POWERIG® Hydraulic Unit's valves.***

WARNING: Inspect tool for damage or wear before each use. Do not operate if damaged or worn, as severe personal injury may occur.

- *The efficiency and life of your tool depends on proper maintenance. Please read this section completely before proceeding with maintenance and repair. Use proper hand tools in a clean and well-lighted area. Only standard hand tools are required in most cases. Where a special tool is required, the description and part number are given.*
- *While clamping tool or parts in a vise, and when parts require force, use suitable soft materials to cushion impact. For example, using a half-inch brass drift, wood block and vise with soft jaws greatly reduces possibility of damaging tool. Remove components in a straight line without bending, cocking or undue force. Reassemble tool with the same care*

Sealants, Lubricants, Service Kits

- See **SPECIFICATIONS** for fluid type. Dispose of fluid in accordance with local environmental regulations. Recycle steel, aluminum, and plastic parts in accordance with local lawful and safe practices.
- Rub Slic-Tite®* with PTFE thread compound, or equivalent, on pipe plug threads and quick connect fitting.

CAUTION: Do not use TEFLON®* tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction. (Slic-Tite®* is available in stick form as Huck P/N 503237.)

- Smear LUBRIPLATE® 13OAA*, or equivalent lubricant, on O-Rings and mating surfaces to aid assembly and to prevent damage to O-Rings. (LUBRIPLATE 13O-AA is available in a tube as Huck P/N 502723.)
- Each Service Kit contains perishable parts for your specific tool. As foreseeable use may indicate, keep extra kits (O-rings, Back-up Rings, other standard items) and tool parts in stock. When stock is depleted, you can get kit items from any regular retailer of these items. See kit parts list for: O-ring size (AS568- number); material; durometer.

PREVENTIVE MAINTENANCE

System Inspection

Operating efficiency of the tool is directly related to the performance of the complete system, including the tool with nose assembly, hydraulic hoses, trigger and control cord, and POWERIG. Therefore, an effective preventive maintenance program includes scheduled inspections of the system to detect and correct minor troubles. At the beginning of each shift/day:

- Inspect tool and nose assembly for external damage.
- Verify that hydraulic hose fittings, couplings, and electrical connections are secure.
- Inspect hydraulic hoses for damage and deterioration. Do not use hoses to carry tool. Replace hoses if damaged.
- Observe tool, hoses, and hydraulic unit during operation to detect abnormal heating, leaks, or vibration.
- Max hydraulic fluid contamination level: NAS 1638 class 9, or ISO CODE 18/15, or SAE level 6.

POWERIG Maintenance

Maintenance instructions and repair procedures are in the appropriate POWERIG Instruction Manual.

Tool Maintenance

Whenever disassembled and also at regular intervals (depending on severity and length of use), replace all seals, wipers, and back-up rings in tool. Service Kits, hoses, and extra parts should be kept in stock. Inspect cylinder bore, pistons, and piston rods for scored surfaces and excessive wear or damage. Replace as necessary.

CAUTION: Always replace seals, wipers, and back-up rings when tool is disassembled for any reason.

Nose Assembly Maintenance

Clean nose assembly often. Dip in mineral spirits or similar solvent to clean puller and wash away metal chips and debris. At regular intervals, as experience shows, disassemble nose and use a sharp "pick" to remove imbedded particles from grooves of puller.

* *DEXRON is a registered trademark of General Motors Corp.*
Quintolubric is a registered trademark of Quaker Chemical Corp.
Slic-Tite is a registered trademark of LA-CO Industries, Inc.
TEFLON is a registered trademark of DuPont Corp.
LUBRIPLATE is a registered trademark of Fiske Brothers Refining Co.

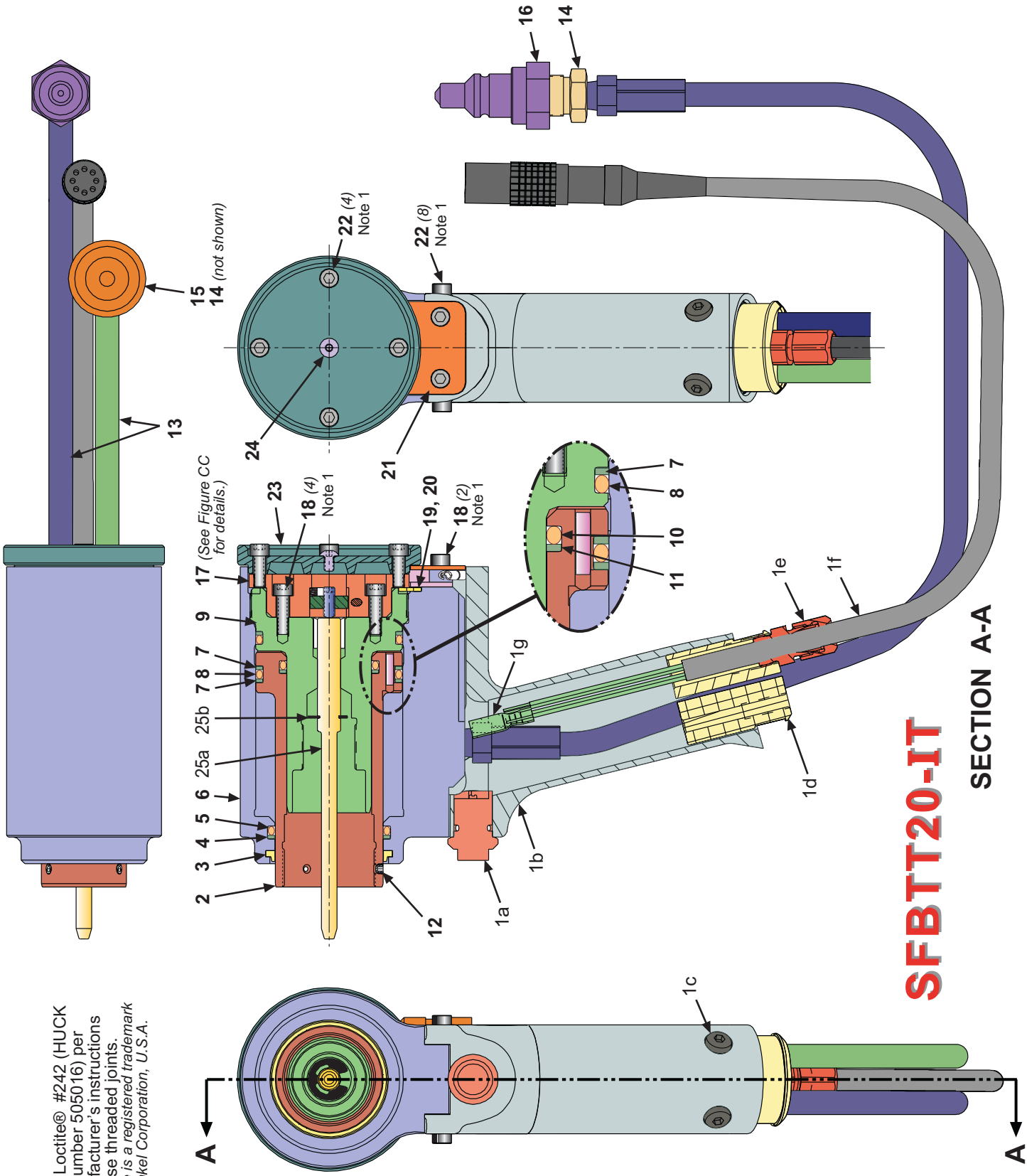
Tool Assembly Parts List *(Figures 5 and 6)*

Item	Description	SFBTT20-IT	Qty.	
1	**Handle Assembly**	129201	**1**	
1a	Trigger Switch Assy	120361	1	
1a1	*Trigger Switch*	*128743*	*1*	
1a2	*O-Ring*	*500779*	*1*	
1b	Handle	129017	1	
1c	Button Head Screw	502489	4	
1d	Clamp Guide	128838	1	
1e	Strain Relief Assy	505344-3	1	
1f	Cord Assembly	129200	1	
1g	Bullet Receptor	507174	1	
2 *	**Piston Assembly**	**128837**	**1**	
3	**Wiper**	**506067**	**1**	✓
4	**Back-up Ring**	**501151**	**1**	✓
5	**O-Ring**	**506089**	**1**	✓
6 *	**Cylinder Assembly**	**128978**	**1**	
7	**Back-up Ring**	**501154**	**3**	✓
8	**O-Ring**	**503850**	**2**	✓
9	**End Cap**	**128976**	**1**	
10	**O-Ring**	**506619**	**1**	✓
11	**Back-up Ring**	**501147**	**1**	✓
12	**Set Screw**	**501780**	**3**	
13	**Hydraulic Hose**	**124881-6**	**2**	
14	**Hex Reducing Bushing**	**503431**	**2**	
15	**Female Coupler**	**110439**	**1**	
16	**Male Coupler**	**110438**	**1**	
17	**Switch Housing Assy**	**129300**	**1**	
17a	Switch Housing	128980	1	
17b	Limit Switch Lever	128823	1	
17c	Compression Spring	508368	1	
17d	Set Screw	508364	1	
17e	Dowel	501349	1	
17f *	Switch Assembly	129299	1	
17g	Cap Screw	505879	2	
17h	Set Screw	508365	1	
18	**Cap Screw**	**500062**	**6**	
19	**Locking Disc**	**122764**	**1**	
20	**Locking Disc Cover**	**128983**	**1**	
21	**Wiring Cover**	**128982**	**1**	
22	**Cap Screw**	**500061**	**12**	
23	**End Cap Cover**	**128981**	**1**	
24	**Button Head Screw**	**502471**	**1**	
25	**Actuator Rod Assy**	**129292**	**1**	
25a	Actuator Rod	129290	1	
25b	Retaining Ring	506063	1	

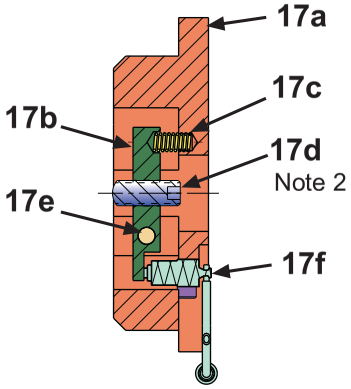
✓ ***These parts are also included in the tool Service Kit (see Kits and Accessories) for each tool.***

* ***When replacing these parts, the assembly must be ordered. The individual sub-components are not sold separately.***

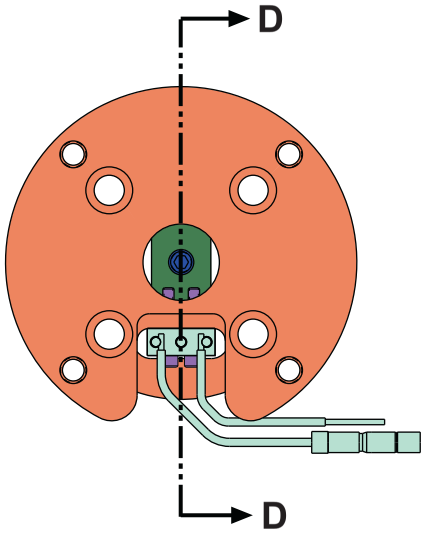
Figure 5

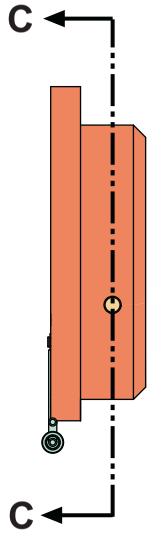


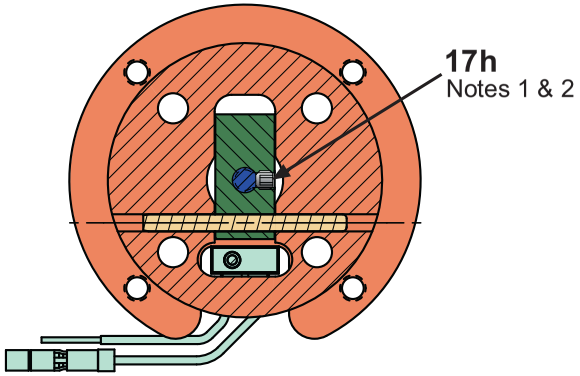
Note:
1. Apply Loctite® #242 (HUCK part number 505016) per manufacturer's instructions to these threaded joints.
Loctite is a registered trademark of Henkel Corporation, U.S.A.



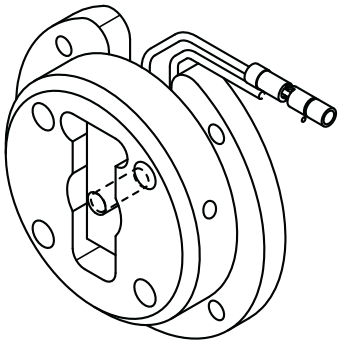
SECTION D-D

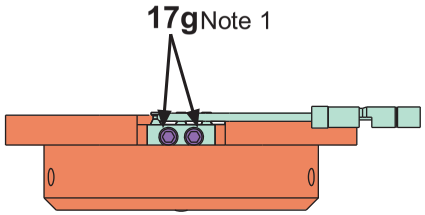






SECTION C-C





Notes:

1. Apply Vibra-TITE® (HUCK part number 505125) per manufacturer's instructions to these threaded joints. *Vibra-TITE is a registered trademark of ND Industries.*
2. Tighten Setscrew (17h) against Setscrew (17d) until Setscrew (17d) turns with difficulty.

129300 - Switch Housing Assembly

Figure 6

WIRING DIAGRAM 129202

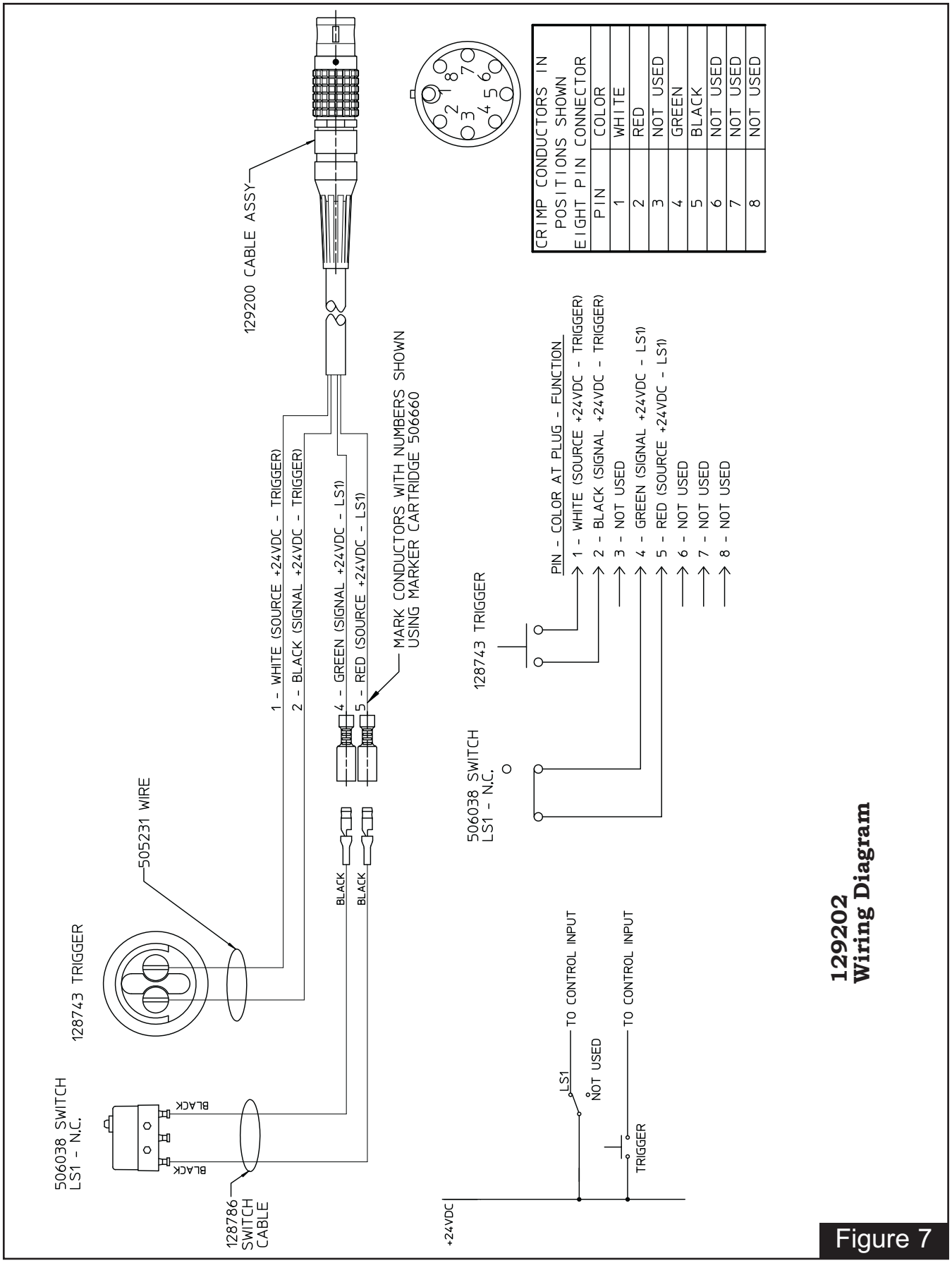


Figure 7

Optional Equipment

To maintain CE conformity, only CE compatible equipment should be used with these tools. Installation tools and nose assemblies are the only CE components unless otherwise noted. Controls and other hardware shown in the manual are for domestic use only.

Service Kit - **BTT20SFKIT**

Teflon Stick - **503237**

Loctite* 242 - **505016**
**Loctite is a trademark of Henkel Corporation, U.S.A.*

Anti-seize Lubricant - **508183**

Hose Cable Extension Assy - **128461-(*length*)**

Limited Warranties

Tooling Warranty:

Huck warrants that tooling and other items (excluding fasteners, and hereinafter referred as "other items") manufactured by Huck shall be free from defects in workmanship and materials for a period of ninety (90) days from the date of original purchase.

Warranty on "non standard or custom manufactured products":

With regard to non-standard products or custom manufactured products to customer's specifications, Huck warrants for a period of ninety (90) days from the date of purchase that such products shall meet Buyer's specifications, be free of defects in workmanship and materials. Such warranty shall not be effective with respect to non-standard or custom products manufactured using buyer-supplied molds, material, tooling and fixtures that are not in good condition or repair and suitable for their intended purpose.

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Huck's sole liability and Buyer's exclusive remedy for any breach of warranty shall be limited, at Huck's option, to replacement or repair, at FOB Huck's plant, of Huck manufactured tooling, other items, nonstandard or custom products found to be defective in specifications, workmanship and materials not otherwise the direct or indirect cause of Buyer supplied molds, material, tooling or fixtures. Buyer shall give Huck written notice of claims for defects within the ninety (90) day warranty period for tooling, other items, nonstandard or custom products described above and Huck shall inspect products for which such claim is made.

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The only warranties made with respect to such tool, part(s) or other items thereof are those made by the manufacturer thereof and Huck agrees to cooperate with Buyer in enforcing such warranties when such action is necessary.

Huck shall not be liable for any loss or damage resulting from delays or nonfulfillment of orders owing to strikes, fires, accidents, transportation companies or for any reason or reasons beyond the control of the Huck or its suppliers.

Huck Installation Equipment:

Huck International, Inc. reserves the right to make changes in specifications and design and to discontinue models without notice.

Huck Installation Equipment should be serviced by trained service technicians only.

Always give the Serial Number of the equipment when corresponding or ordering service parts.

Complete repair facilities are maintained by Huck International, Inc. Please contact one of the offices listed below.

Eastern
One Corporate Drive Kingston, New York 12401-0250
Telephone (845) 331-7300 FAX (845) 334-7333

Outside USA and Canada
Contact your nearest Huck International Office, see back cover.

In addition to the above repair facilities, there are Authorized Tool Service Centers (ATSC's) located throughout the United States. These service centers offer repair services, spare parts, Service Parts Kits, Service Tools Kits and Nose Assemblies. Please contact your Huck Representative or the nearest Huck office listed on the back cover for the ATSC in your area.

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520-747-9898
FAX: 520-748-2142

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Kingston, NY 12401
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FAX: 845-334-7333

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FAX: 310-830-1436

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